

## **Appendix D**

### **Task B5: Conversion of Redmond/Cleveland Couplet Prior to Implementation of a Downtown Bypass**

**Parsons Brinckerhoff**

**June 10, 2003**

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### **Introduction**

The Redmond Downtown Master Plan recommended the conversion of the Redmond Way/Cleveland Street one-way couplet to two separate two-way streets. The configuration proposed for Redmond Way is one lane in each direction with a left-turn lane at intersections and parking on one side of the street. Cleveland Street would be one lane in each direction as well, with parking on both sides of the street and left-turn lanes generally not provided. The Master Plan also recommended improvements to Bear Creek Parkway (BCP), including extending and widening it to enable it to function as an effective downtown bypass. With respect to phasing of improvements, the Plan recommended that the couplet not be converted until after the BCP improvements had been completed. The purpose of this summary paper is to discuss the potential ramifications of near-term conversion of the existing Redmond Way/Cleveland Street one-way couplet to two-way operations prior to implementation of the BCP improvements. This summary relies on analysis results already prepared during the Downtown Master Plan process, and information from a similar 1993 issue paper prepared by Mike Birdsall. This paper provides a qualitative assessment and does not convey a specific recommendation. It is intended to provide information and professional interpretation and insight as to the expected trade-offs between different staging plans so that an informed decision on staging can be made.

### **Summary of Previous Issue Paper**

In February 1993, Mike Birdsall prepared a report analyzing the merits and impacts of a "Low Capacity Couplet" option. Basic conclusions of the report included the following:

- While the option may have merit with respect to creating a more pedestrian-friendly downtown area, the trade-off would be a negative social cost in that "the diversion to other routes is accomplished primarily by making the couplet a disagreeable place to drive."
- The impact of a more congested system will be felt more by local Redmond drivers than by regional through traffic.
- If the Low Capacity Couplet option is pursued, "it will be essential to mount strong efforts – inside and outside the City – to provide alternative bypass facilities in other corridors."
- "Only with a strong bypass alternative can traffic on the couplet be managed at a level that is conducive to a "local-access" atmosphere that would appeal to the urban design perspective."
- Without dramatic improvements to West Lake Sammamish Parkway between SR 520 and Redmond Way, SR 520 will not serve as an adequate bypass for couplet traffic.

The report summed up its conclusions in the following concluding statements:

“.... it is difficult to justify the Low Capacity Couplet in isolation. Rather, it is best viewed as a design concept for a future local access scenario when adequate regional-scale bypass facilities are developed and operational. The Low Capacity Couplet will be attractive to its users only if the traffic volumes it serves are also relatively low, compared to the present situation. That can only happen if adequate bypass facilities are provided. If regional traffic cannot go around downtown Redmond with ease, it will inevitably pass directly through it.”

## Current Analysis

While the Birdsall report was written over 10 years ago, many of the issues raised are valid today. Continued residential growth east of Redmond, and employment growth west of Redmond has increased the east-west traffic demand through Redmond. However, since that time, Bear Creek Parkway (BCP) has been constructed around the south side of the Redmond Town Center. This facility, a three-lane roadway (one-lane in each direction, with left-turn lanes) connecting NE Redmond Way at 170<sup>th</sup> Avenue with Leary Way at 162<sup>nd</sup> Avenue, serves in a limited capacity as a bypass for east-west traffic. Its primary limitation, however, is that it does not provide a direct or convenient connection to Redmond Way on the west side of downtown. As such, through traffic would choose it as an alternative only if operations on the couplet were severely degraded from current conditions.

The traffic analysis for the Downtown Master Plan analyzed PM peak hour operations for both existing (year 2000) and projected future (year 2020) conditions. Two future condition alternatives were analyzed: a Future “No-Action” option; and an option representing the proposed Downtown Master Plan (DMP) street network concept. The DMP Concept included converting the couplet to two-way streets as indicated above, widening BCP to five lanes (two lanes in each direction with a left-turn lane) and extending it westward from its current intersection with Leary Way to connect with Redmond Way near its current intersection with 159<sup>th</sup> Place.

Year 2020 PM peak hour traffic volumes on the primary east-west streets through downtown are expected to increase by 50 to 60 percent over current volumes. In the Future No-Action, this level of growth is expected to be experienced evenly across both the couplet and BCP. In the DMP Concept, conversion of the couplet and expansion of BCP is projected to cause a shift in traffic patterns so that the resulting volumes on the couplet are similar to today's, with BCP and SR 520 accommodating the projected diversion of traffic away from the converted couplet. In the DMP Traffic Analysis Report, operations on the converted couplet given these projected volumes are characterized as follows:

“Within the downtown core, conversion of the couplet to two-way operation is expected to result in reduced capacity and higher levels of congestion on Redmond Way and Cleveland St., which also influences traffic operations on north-south streets. Traffic

volumes on the former couplet are expected to significantly decrease, by approximately 1,700 vehicles when compared to the No Action option. Visual observation of the SimTraffic traffic simulation model confirms that although higher levels of delays and queuing occur in the vicinity of the couplet, traffic flow is stable and vehicles are able to move through the system."

To summarize, while future conditions on the converted couplet are projected to be considerably more congested than they are today, they are expected to be reasonable in light of the anticipated benefits of having a more active, pedestrian-friendly downtown core. Additionally, a much higher percentage of drivers using the converted couplet in the future are expected to be those who "want to be there" as opposed to those who just "want to pass through". It is envisioned that the street network layout proposed in the DMP will provide the framework in which a more thriving pedestrian-oriented downtown core can grow, resulting in an area where people will want to be and where busy sidewalks and streets are accepted as part of the landscape. Note that reaching this desired urban environment is likely to be a gradual process that occurs over several years.

If the couplet were converted in the near future prior to the completion of a BCP expansion, however, some differences in how both the downtown core and the traveling public respond can be anticipated. Given that existing traffic volumes are similar to projected year 2020 volumes on the converted couplet in the DMP Concept, one can expect that operations would be similar, i.e., considerably more congested. However, the differences are that a) the change from moderate congestion to more severe congestion would occur virtually overnight, b) there would still be a significant component of "through traffic" in the traffic stream, c) the congestion will be viewed as having been caused by a reduction in capacity rather than by growth in traffic volumes, and d) the urban environment "benefits" that make the level of congestion acceptable in the long run will not have occurred. Each of these issues is explored in more detail below.

#### *"Overnight" Change*

The DMP Concept, improving the BCP bypass with subsequent conversion of the couplet, would likely result in east-west operations through the downtown core that do not significantly differ from today's. While overall capacity of Redmond Way/Cleveland Street will have decreased, enough traffic will have diverted to the BCP bypass so that overall operations remain similar. Subsequent to these improvements (assuming they occur in the near future, well before the year 2020), inevitable traffic growth will occur so that on a gradual basis, traffic levels by 2020 on Redmond Way/Cleveland Street will grow back to the levels experienced today. Implementing the BCP and couplet changes in tandem allows for relatively insignificant impacts to the traveling public in the near-term, and a gradual increase in congestion levels over time. This would provide a reasonably long period for travelers to adjust to the long-term impacts. In contrast, if the couplet were converted tomorrow with no improvements to BCP, the resulting congestion impacts would be dramatic and widely noticed.

### *Traffic Stream*

With provision of the bypass in the DMP Concept, approximately 80 percent of the traffic stream on Redmond Way/Cleveland Street is projected to be local traffic by 2020, i.e., traffic that has a destination in downtown. Without a bypass, at least half of the traffic is estimated to be through traffic. The difference in nature between through trips and local trips can be argued. However, it is assumed that because through travelers want to be "somewhere else", they are less likely to be tolerant of congestion. Converting the couplet prior to improving the bypass would result in a traffic stream with a higher percentage of through trips, and most probably a higher percentage of travelers with less tolerance for the congestion caused by the change.

### *Perceived Cause of Congestion*

As discussed above, converting the couplet soon after the BCP bypass is implemented would result in little noticeable change in congestion levels in the downtown core. Over the years, congestion would naturally increase as overall traffic volumes increase. Congestion would likely be perceived at that point as an unavoidable result of local and regional growth. However, if the couplet were converted without an associated improvement to the BCP bypass, the cause of congestion would be directly tied to the couplet conversion, and would not be perceived as "unavoidable".

### *Benefit Trade-Offs*

One of the prime benefits expected to result from the DMP recommendations is a more pedestrian-friendly, active and thriving downtown core. It is recognized that this type of urban change typically takes a number of years to materialize. However, by the year 2020, when traffic congestion on the converted couplet is projected to be significant, the associated benefits of a more desirable urban form will have occurred. In this case it is probable that the public would recognize and understand the trade-off between more congested two-way streets and a thriving downtown core.

In contrast, converting the couplet in the near future without improving the BCP bypass is expected to immediately result in levels of congestion similar to what would be experienced in year 2020 with the DMP Concept. The change in congestion levels would be dramatic and would occur long before the associated changes in urban form and downtown activity levels would. Consequently, it is less likely that the public would understand or accept the trade-off being offered between congestions levels and an improved downtown core.

## **Conclusions**

Both the Birdsall "Low Capacity Couplet" Report, and the Redmond Downtown Master Plan have recommended that an effective downtown bypass facility be constructed prior to implementation of any strategies that would lower the capacity of the couplet, such as converting the couplet to two-way operations. The DMP traffic analysis has indicated that traffic levels on the converted couplet in 2020 under the proposed DMP Concept would be similar to today's

volumes on the couplet. This implies that congestion levels on the converted couplet in 2020 under the DMP Concept (which includes an improved BCP bypass), would be similar to congestion levels on a converted couplet if it were implemented tomorrow without an improved BCP bypass. Given this, a natural question to ask is "if this level of congestion is acceptable in 2020, would it not also be acceptable today?" The answer is that while congestion levels may be similar, there would likely be significant differences in circumstances and perceptions surrounding the congestion, including the following:

- The change in congestion levels would be dramatic and will have happened virtually "overnight", not allowing time for the public to adjust to it.
- A higher percentage of trips experiencing the congestion will be through trips. These drivers (many of whom are also Redmond residents) will likely be less tolerant of the increased congestion because their objective is to get through town as quickly as possible, rather than wanting to be in downtown.
- The cause of congestion will be seen as a reduction in capacity (which can be perceived as avoidable), as opposed to an inevitable growth in traffic associated with local and regional development (which is often viewed as "unavoidable" and perhaps even necessary).
- The immediate change in congestion levels will have occurred long before the urban environment "benefits" that make the level of congestion acceptable in the long run will have had a chance to occur.

In the event that the decision to convert the couplet prior to improving the BCP bypass is made, it is possible that some of the issues outlined above could be partially mitigated through a strong public relations campaign. The campaign would have to focus on the long-term benefits that the conversion would help generate (i.e., the pedestrian-friendly environment, and a more active downtown core), and promote other actions that would facilitate the change in urban form. Also, since the levels of congestion will only get worse over the years if a bypass is not implemented, moving forward on and publicizing an action plan for implementing a bypass would be essential.